

III. Remarks

The present Preliminary Amendment is being filed together with a Request for Continued Examination.

The Official Action of November June 9, 2009 has been thoroughly studied. Accordingly, the changes presented herein for the application, considered together with following remarks, are believed to be sufficient to place the application into condition for allowance.

By the present Preliminary Amendment, independent claims 1 and 2 have been changed to recite that R is an alkyl group having 6-10 carbon atoms, with a number average molecular weight Mn of equal to or greater than 300.

New dependent claims 7 and 8 have been added which recite that R is an alkyl group having 6-10 carbon atoms, with a number average molecular weight Mn of 300-1,400.

Entry of the changes to the claims is respectfully requested.

Claims 1-8 are pending in this application.

Claims 1-6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0068797 to Ikemoto et al. in view of U.S. Patent Application Publication No. 2004/0106723 to Yang et al. and U.S. Patent Application Publication No. 2004/0226393 to Hong.

For the reasons set forth below, it is submitted that each of the pending claims are allowable over the prior art of record and therefore, the outstanding rejection of the claims should properly be withdrawn.

Favorable reconsideration by the Examiner is earnestly solicited.

The Examiner has relied upon Ikemoto et al. as disclosing:

...a rubber composition comprising 1) a rubber compound composed of at least one of an ethylene-propylene-diene (EPDM) terpolymer and an ethylene-propylene (EPM) copolymer, 2) a peroxide vulcanizing agent, 3) a resorcinol-based compound, and 4) a melamine resin (¶0008-0011) (claims 1, 2). Example 1 of Ikemoto discloses a rubber composition comprising 100 parts of ESPRENE 501A, an EPDM rubber having a Mooney viscosity (ML 100°C) of 43 and comprising 50% ethylene, 4% diene, and, by extension, 46% propylene and 4.2 parts di-t-butyl peroxy-diisopropylbenzene as a peroxide vulcanizing agent (¶0038) (claims 1, 2). Example 7 of Ikemoto discloses a rubber composition prepared in a manner similar to Example 1, except ESPRENE 201, an EPM rubber having a Mooney viscosity (ML 100°C) of 43, was used instead of EPDM. Ikemoto teaches that the rubber compositions of US20020068797 may be used as rubber vibration insulators (¶0036).

As stated above, Ikemoto recites that the rubber compound is composed of at least one of EPDM and EPM; Ikemoto therefore teaches the use of a rubber composition comprising a blend of EPDM and EPM. The examiner therefore takes the position that it would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare a blend rubber comprising ESPRENE 501A and ESPRENE 201 to prepare a rubber composition as described in US20020068797 (claim 2).

Hong has been relied upon as disclosing a conventional crankshaft that is equipped with a damper pulley.

The Examiner concedes that:

Ikemoto and Hong are both silent regarding the addition of a C₈-C₁₂ α-olefin oligomer having a number average molecular weight of 300-1400 to EPDM/EPM.

The Examiner has relied upon Yang et al. as disclosing:

...the use of oligomers of C₆ to C₁₄ α-olefins (claims 1, 2) (¶0077) having a number average molecular weight in the range of **100-21,000** (claims 1, 2) (¶0079) as a non-functional plasticizer (NFP) for polyolefin homopolymers and copolymers (¶0002, 0039). Yang discloses that the polyolefin is present in the final composition at levels from 40 to 99.9% by weight, based on the total weight of polyolefin and NFP; by extension, the composition comprises 0.1 to 60% by weight of the NFP (claims 1, 2) (¶0043). Yang discloses that the addition of the NFP results in a polymer composition having improved properties (¶0007-0008).

The Examiner further states:

Ikemoto teaches that the polymer composition of US2002/0068797 may contain additives (¶0033-0034). As taught by Yang, it was known in the art to use low molecular weight oligomers of C₆ to C₁₄ α-olefins as plasticizers for polyolefin copolymer.

The Examiner therefore takes the position that:

...it would have been obvious....to modify the damper rendered obvious by the combination of Ikemoto and Hong by adding 1-60% by weight of a C₆ to C₁₄ α-olefins having Mn of 100 to 21,000 to the EPDM/EPM composition, for the purpose of obtaining a damper having improved properties, as taught by Yang.

It is clear that Ikemoto et al. does not teach or suggest applicants' disclosed and claimed invention.

In this regard, Ikemoto et al. teach eliminating the need of an adhesive layer/composition in the fabrication of automobile hoses which involves the use of a composition that comprises: (a) a rubber composed of EPDM and EPM; (b) a resorcinol-based compound; and (c) a melamine resin.

The resorcinol-based compound functions as an adhesive and the melamine resin functions as an adhesive adjuvant.

As noted above the Examiner has relied upon Yang et al. as teaching:

...the use of oligomers of C₆ to C₁₄ α-olefins (claims 1, 2) (¶0077) having a number average molecular weight in the range of 100-21,000 (claims 1, 2) (¶0079) as a non-functional plasticizer (NPF) for polyolefin homopolymers and copolymers (¶0002, 0039).

In order to distinguish over The combination of Ikemoto et al., Yang et al. and Hong, independent claims 1 and 2 has been amended herein to recite that R in the

formula $\text{CH}_2=\text{CHR}$ (applicants' α -olefin oligomer) is an alkyl group having 6-10 carbon atoms, with a number average molecular weight M_n of equal to or greater than 300.

As noted, and relied upon by the Examiner, Yang et al. teaches of oligomers of C_6 to C_{14} α -olefins having a number average molecular weight in the range of 100-21,000.

As discussed in paragraph [0021] of applicants' specification:

α -olefin oligomers having an M_n value of **less than 300** undergoes volatilization at the cross-linking or heat aging, resulting in considerable **deterioration of physical properties**.

It is accordingly submitted that Yang et al., who allows for the use of α -olefins that have M_n of as low as 100, flails to appreciate of teach applicants' disclosed and claimed invention.

Applicants' further disclose that M_n values of greater than 1,400 do not provide any improved effects and are thus usless.

Accordingly, it would not be "obvious" to use α -olefins oligomers with M_n of up to 21,000 as taught by Yang et al.

Thus the combination of Ikemoto et al., Yang et al. and Hong does not render applicants' claimed invention obvious under 35 U.S.C. §103.

It is noted that Yang et al. does not indicate that the disclosed plasticized polyolefin compositions are useful for the applications disclosed by Ikemoto et al. of useful as vibration dampeners according to applicants' invention.

Yang et al. only mention improvements that include "processability, flexibility, softness, and impact resistance" which are not germane to Ikemoto et al. or applicants' invention.

Based upon the above distinctions between the prior art relied upon by the Examiner and the present invention, and the overall teachings of prior art, properly considered as a whole, it is respectfully submitted that the Examiner cannot rely upon the prior art as required under 35 U.S.C. §103 to establish a *prima facie* case of obviousness of applicants' claimed invention.

It is, therefore, submitted that any reliance upon prior art would be improper inasmuch as the prior art does not remotely anticipate, teach, suggest or render obvious the present invention.

It is submitted that the claims, as now amended, and the discussion contained herein clearly show that the claimed invention is novel and neither anticipated nor obvious over the teachings of the prior art and the outstanding rejection of the claims should hence be withdrawn.

Therefore, reconsideration and withdrawal of the outstanding rejection of the claims and an early allowance of the claims is believed to be in order.

It is believed that the above represents a complete response to the Official Action and reconsideration is requested.

Conclusion

It is believed that the above represents a complete response to the Official Action and reconsideration is requested.

If upon consideration of the above, the Examiner should feel that there remain outstanding issues in the present application that could be resolved; the Examiner is invited to contact applicants' patent counsel at the telephone number given below to discuss such issues.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 23-1925 and please credit any excess fees to such deposit account.

Respectfully submitted,

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